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REQUEST FOR ACCESS TO AN A	APPLICATION	CHDER 3/ CFR I	.1 4 (3)	
	In re Application	n of		
RECEIVED FFR 2 1 2003	Application Num	eper 191177 Examiner	Filed 5-29-92	
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 I hereby request access under 37 CFR 1.14(e)(ABANDONED Application, which is not within the Application (CPA) (37 CFR 1.53(d)) and is: (CF 	he file jacket of a p			
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(12) United States Patent Chait et al.

(10) Patent No.:

US 6,271,037 B1

(45) Date of Patent:

Aug. 7, 2001

(54)	METHOD AND PRODUCT FOR THE SEQUENCE DETERMINATION OF PEPTIDES USING A MASS SPECTROMETER	5,240,859 * 8/1993 Aebersold		
	TEI TIDES COING A MASS SI ECTROMETER	5,527,675 * 6/1996 Coull et al		
(75)	Inventors: Brian T. Chait, New York, NY (US); Ronald Beavis, Winnipeg (CA); Rong	5,719,060 • 2/1998 Hutchens et al		
	Wang, New York, NY (US); Stephen B. H. Kent, San Francisco, CA (US)	FOREIGN PATENT DOCUMENTS		
(73) Assignees: The Rockefeller University, NY (US); The Scripps Research Institute, La	529 604 A1 3/1993 (EP). WO 94/06017 3/1994 (WO).			
	Jolla	OTHER PUBLICATIONS		
(*)	Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35	HCAPLUS DN 103:34503, Aleksandrov et al., Bioorg. Khim., 11(5), (1985), 705-8.*		
	U.S.C. 154(b) by 0 days.	Aebersold et al., Protein Science, 1: pp. 494-503, 1992.*		
(21)	Appl. No.: 08/341,555	Beavis et al., Organic Mass Spectrometry, vol. 27, pp. 156-158, 1992.*		
(22)	PCT Filed: May 27, 1993	Kent. Annual Rev. Biochem., 57: pp. 957-984, 1988.*		
(86)	PCT No.: PCT/US93/05070	L.A. Smith, R.M. Caprioli (1983) Biomed. Mass Spectrom. 10:98. "Following Enzyme Catalysis in Real-time Inside a Fast Atom Bombardment Mass Spectrometer".		
	§ 371 Date: Jan. 24, 1996			
	§ 102(e) Date: Jan. 24, 1996	G.E. Tarr (1977), Methods Enzymology 47:355. "Improved		
(87)	PCT Pub. No.: WO93/24834	Manual Sequencing Methods".		
	PCT Pub. Date: Dec. 9, 1993	S.H. Kent, Annual Rev. Biochem. 57:957-984, (1988). "Chemical Synthesis Of Peptides And Proteins".		
	Related U.S. Application Data			
(63)	Continuation-in-part of application No. 07/891,177, filed on	(List continued on next page.)		
• •	May 29, 1992, now abandoned.	Primary Examiner—Dwayne C. Jones		
(51)	Int. Cl. ⁷ G01N 33/00	Assistant Examiner—C. Delacroix-Muirheid		
(52)	U.S. Cl 436/89; 436/173; 436/174;	(74) Attorney, Agent, or Firm—Townsend and Townsend and Crew LLP		
(58)	436/178; 250/281; 250/282 Field of Search	(57) ABSTRACT		
	436/178; 250/281, 282	Method is described for sequencing polypeptides by forming		
(56)	References Cited	peptide ladders comprising a series of polypeptides in which adjacent members of the series vary by one amino acid		
	U.S. PATENT DOCUMENTS	residue and determining the identity and position of each		
4	1,820,648 * 4/1989 Caprioli et al	amino acid in the polypeptide by mass spectroscopy.		
	5,045,694 9/1991 Beavis et al	45 Claims, 16 Drawing Sheets		

45 Claims, 16 Drawing Sheets

1-2-3-4-5-6-7-8-9n-(OH)			
	INTACT STARTING		
	PEPTIDE CHAIN		
(X)-1-2-3-4-5-6-7-8-9n-(OH)			
(X)-2-3-4-5-6-7-8-9n-(OH)			
(X)-3-4-5-6-7-8-9n-(OH)			
(X)-4-5-6-7-8-9n-(OH)			
(X)-5-6-7-8-9n-(OH)			